Center for Scientific Review
National Institutes of Health

Scientific Areas of Integrated Review Groups (IRGs)

For a listing of the Scientific Review Administrator and membership roster for each study section, click on the study section roster under the study section name within an IRG listed below or go to the study section index (study sections listed alphabetically) and click on the specified roster next to the name of the study section.

Last updated on 21st September, 2004

Referral & Review

Integrative, Functional, and Cognitive Neuroscience IRG [IFCN]

The ten study sections comprising the Integrative, Functional, and Cognitive Neuroscience [IFCN] IRG review applications within a very wide range of neuroscience research aimed at furthering our understanding of how the nervous system is organized and functions at an integrative, systems level. Specific areas reviewed by the IFCN IRG include: studies of the neural basis of emotional and motivational behavior; regulation of function, at the systems level, by neuroendocrine and neuroimmune influences; the analysis of system function under varying behavioral states, such as sleep and hibernation; the basis of biological rhythms; the maintenance of homeostasis; chemosensation, hearing, balance, touch, somatosensation, and visual perception; motor systems and sensorimotor integration; the integration of multisensory information; the neurobiological basis of learning, memory and other cognitive processes; computational and theoretical models of cognitive processes; mechanisms underlying neural coding of complex stimuli (e.g., pattern recognition, spatial transformations, speech perception); and attention and its effects on information processing in the nervous system. Research proposed in applications reviewed by study sections in the IFCN IRG may have relevance to disorders or disease processes, but the emphasis would be on the effect of the process on the structure or function of the system under investigation, rather than on the disease process itself.

In addition to this IRG, the Molecular, Cellular, and Developmental Neuroscience [MDCN] and Brain Disorders and Clinical Neuroscience [BDCN] IRGs within CSR focus on the review of neuroscience-related applications, and the Biobehavioral and Behavioral Processes [BBBP] IRG also has some shared interests with the IFCN IRG. Please see the descriptions and shared interest statements of these IRGs for a complete description of their review venues.

The following study sections are included in the IFCN IRG:

Neurobiology of Motivated Behavior Study Section [NMB] ***(Formerly IFCN-1)***
Neuroendocrinology, Neuroimmunology, and Behavior Study Section [NNB] ***(Formerly IFCN-2)***
Biological Rhythms and Sleep Study Section [BRS] ***(Formerly IFCN-3)***
Somatosensory and Chemosensory Systems Study Section [SCS] ***(Formerly IFCN-4)***
Sensorimotor Integration Study Section [SMI] ***(Formerly IFCN-5)***
Auditory System Study Section [AUD] ***(Formerly IFCN-6)***
Neurobiology of Learning and Memory Study Section [LAM] ***(Formerly IFCN-7)***
Cognitive Neuroscience Study Section [COG] ***(Formerly IFCN-8)***
Neurotoxicology and Alcohol Study Section [NAL] ***(Formerly ALTX-3)***
Central Visual Processing Study Section [CVP] ***(Formerly VISB)***
IFCN Small Business Activities [SBIR/STTR] Special Emphasis Panels [IFCN Small Business SEPs]

Behavioral Neuroscience Fellowship Study Section [F02A]
Sensory, Motor and Cognitive Neuroscience Fellowship Study Section [F02B]

Neurobiology of Motivated Behavior Study Section [NMB]

(Formerly IFCN-1)

[NMB Roster]

The Neurobiology of Motivated Behavior [NMB] Study Section reviews applications on the neural basis of behavior, such as motivation and emotion. Studies include the molecular, cellular, anatomical, genetic and neurobiological bases of motivated and emotional behavior. Emphasis is on the neuronal circuits critical to the mediation of positively and negatively motivated behavior.

Specific areas covered by NMB:

- Positively motivated behaviors; neural substrates [e.g., signaling molecules, channels, transporters, receptors, transmitters, neurons] involved in the mediation of drug and other types of reward; circuits [e.g., mesolimbic, mesocortical-thalamic] important in the mediation of reward and craving; mechanisms of tolerance, dependence, withdrawal, and sensitization; as well as predisposing factors [genetic, developmental, and environmental] leading to drug seeking and relapse

- Stress, fear, anxiety, aggression; critical molecules [e.g., receptors, transmitters, hormones, transporters, channels, signaling molecules] involved in the mediation of negatively motivated behavior; circuits [e.g., hypothalamus, hippocampus, amygdala, locus coereleus, prefrontal cortex] important in the mediation of such behavior; mechanisms of habituation and sensitization leading to altered responsiveness to stressful and aversive stimuli; and predisposing factors [genetic, developmental, and environmental] that may shape such behavior

- Feeding, drinking, sexual and other consummatory behavior; critical molecules [e.g., receptors, transmitters, hormones, transporters, channels, signaling molecules] involved in the mediation of such behavior; limbic and related circuits important in the mediation of such behavior; mechanisms of plasticity; and predisposing factors [genetic, developmental, and environmental] which may shape such behavior; social behavior

- Exogenous influences on neurobiological processes; causes, correlates and consequences [including neuroadaptation] of the effects of exposure to exogenous agents, neuropsychoactive drugs, or trauma at any stage across the life span that focus on analysis of the organization, structure and/or function of the mature nervous systems, rather than on fundamental processes involved in neural induction, specification or differentiation

- Neurobiological actions of psychoactive/psychotherapeutic agents; molecular and cellular mechanisms of action of psychoactive drugs on behavior; neuroanatomical circuitry mediating the behavioral effects of psychotherapeutic drugs; influence of genetic manipulations, perinatal manipulations, gender and environment on the behavioral actions of psychoactive drugs

NMB has the following shared interests within the IFCN IRG:

- NMB has shared interests with NNB. Applications focused primarily on the neural mechanisms of behavior are appropriate for NMB, while applications focused primarily on HPA axis and neuroimmune systems are more appropriate for NNB.
- In general, studies of nociception/pain are reviewed by SCS. SCS should also review applications where the

neural basis of motivation and emotion is studied in the context of smell and taste function and where specific knowledge of these systems is essential for review.

- Studies of the structural and functional bases of motivational and emo tional behavior are appropriate for NMB, but research on the influence of emotional and motivational processes on learning and memory should be reviewed in LAM.

- With NAL regarding the interaction of alcohol and toxicants and CNS function. NAL is mo re appropriate when the primary focus is on alcohol or toxicant pathophysiology, but NMB should be considered if the focus is on the effects of other substances on the neural substrates of motivational behavior.

NMB has the following shared interests outside the IFCN IRG:

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** Applications with a primary research focus on behavioral consequences rather than their neurobiological mechanisms are more appropriate for a study section in the BBBP IRG.

- **With the Endocrinology, Metabolism, Nutrition and Reproductive Sciences [EMNR] IRG:** Applications involving the central nervous system with a focus on metabolic homeostasis or causes of obesity are areas of shared interest with EMNR and could be referred to the EMNR IRG when end points relate primarily to cellular or systemic metabolic phenotypes or energy balance; and to NMB when the focus is on the neural basis of ingestive behaviors or satiety.

- **With the Renal and Urological Sciences [RUS] IRG:** Applications focusing on the central nervous system dealing with thirst as a motivated behavior could be assigned to NMB. Applications focusing on the central nervous system regulation of renal function could be assigned to RUS IRG.

- **With the Molecular, Cellular and Developmental Neuroscience [MDCN] IRG:** The MCDN IRG may be more appropriate for studies of signal transduction and related processes that occur within the context of a cell, with particular emphasis on cell electrophysiology, molecular biophysics, and neurochemical pathways. NMB may be more appropriate for studies in the context of integrated circuits, systems, and behavior. Developmental studies directed at understanding the effects of early experience on motivated and emotional behavior would be within the purview of NMB.

- **With the Brain Disorders and Clinical Neuroscience [BDCN] IRG:** There are shared interests between the BDCN IRG and NMB in the neurobiological bases of motivated behaviors. If an application focuses on a clinical population or a model of a disease state, it could be assigned to the BDCN IRG. If the application deals with understanding underlying neurobiological processes, it could be assigned to NMB.

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Neuroendocrinology, Neuroimmunology and Behavior Study Section [NNB]

(Formerly IFCN-2)

[NNB Roster]

The Neuroendocrinology, Neuroimmunology and Behavior [NNB] Study Section is concerned with the neurobiological basis of behavior across the life span, with a focus on neuroendocrine, neuropeptide, and neuroimmune systems. NNB primarily considers research with non-human animals [vertebrates and invertebrates], but relevant work with humans is also included. Both normal and disordered processes are addressed. Major areas of interest include sexual behavior, including courtship, pair bonding, and parental behavior; ingestive behaviors; drugs of abuse; stress; and interactions of the brain with immune systems. Studies

typically use behavioral, physiological, pharmacological, anatomical, and developmental approaches, but may also include molecular, cellular, or genetic approaches.

Specific areas covered by NNB:

- Reproductive behaviors and sexual differentiation; neurobiological variables, including neuroendocrine, neurotransmitter, genetic, and developmental factors, underlying modulation of or resulting from reproductive behavior, including social affiliation, mate choice and pair-bonding, courtship, sexual behavior, and parenting behaviors

- Neuroendocrine regulation of feeding and drinking; hormones, neuropeptides, and neurotransmitters and their receptors regulating consummatory behaviors; anatomical and neuroendocrine efferents regulating consummatory behaviors and energy balance; effects of drugs, stressors and environmental factors on this regulatory axis

- Stress; neurobiological mediators, including the Hypothalamic-Pituitary-Adrenal [HPA] Axis, of environmental stimulation including stressors; interaction of stress and drug effects; neuroanatomical, genetic, metabolic, and pharmacological and hormonal basis for such mediation; and receptors and ligands that mediate these effects; studies of sequelae of maternal deprivation or social isolation

- Interactions between the brain and the immune system; structural basis and mechanisms mediating functional interactions between brain and immune systems; effects of cytokines and chemokines on the nervous system; effects of manipulations [behavioral, neural, neuropharmacological, stress, etc.] on immune system function; brain mechanisms of fever

- Neuroendocrine interactions in drug seeking; neuroendocrine responses to or influences on the effects of psychotropic drugs and environmental factors; neuroendocrine influences on drug-taking and addiction

- Plasticity; development, maturation, and aging of the neuroendocrine and immune systems that regulate brain and behavior, including the plasticity and genesis of these systems

- Other areas, including: biological basis of behavioral polymorphisms, especially sexual dimorphisms and the biological factors underlying aggression, anxiety, etc. using animal models

NNB has the following shared interests within the IFCN IRG:

- There are shared interests between NMB and NNB in terms of the phenomena [ingestive behaviors, reproductive behavior, etc.] being investigated. Applications focused primarily on the neural mechanisms of behavior, specifically those where there is a greater focus on neuropharmacology of neurotransmitter systems and/or on elucidating neuroanatomical pathways, are more appropriate for NMB. Applications focused primarily on neuroendocrine and neuroimmune systems are more appropriate for NNB.

- Studies of neuroendocrinological basis of circadian and circannual rhythms in behavior may be reviewed in BRS. Studies of neuroimmunological factors in sleep regulation and of homeostatic temperature regulation could also be reviewed in BRS, whereas studies of neural mechanisms of fever production, such as in infection, are typically reviewed in NNB.

- Studies of the effect of neurohormones on neurobiological events related to learning and memory are reviewed in LAM.

- With NAL with respect to the interaction of alcohol and CNS function. NAL is more appropriate when the primary focus is on alcohol or toxicant pathophysiology, but NNB should be considered if neuroendocrine interactions are involved.

NNB has the following shared interests outside the IFCN IRG:

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** There is shared interest with the BBBP IRG in the areas of feeding, drinking and other ingestive behaviors, social affiliation, communication, sexual behavior, courtship, parenting, stress, and aggression. Studies in which the primary research focus is behavioral are more appropriate for a BBBP study section, while such studies in the context of neurobiology are more appropriate for NNB.

- **With the Immunology [IMM] IRG:** Neuroimmunology, including studies of inflammation and innate immunity in the nervous system, is an area of shared interest. Studies of neuroendocrine alteration of the immune response are also a shared area. Applications focusing on nerve function may be assigned to IFCN. Applications focusing on immune function or altered immune function may be assigned to IMM.

- **With the Cardiovascular Sciences [CVS] IRG:** Studies of neural and humoral control of cardiac or circulatory function, including neuropeptide control of blood pressure or cardiac response to physiological stress, may be assigned to the CVS IRG. Applications concerned with the neurobiological basis of behavior with a focus on the role of the neuroendocrine, neuropeptide, and neuroimmune systems in stress, maybe assigned to the NNB Study Section.

- **With the Endocrinology, Metabolism, Nutrition and Reproductive Sciences [EMNR] IRG:** NNB has shared interests with the EMNR IRG in the area of neuroendocrinology. NNB generally should be considered when the focus is neural systems and processes underlying behavior, such as sexual behavior, mate choice, aggression, etc. NNB should also be considered for applications dealing with the HPA axis and stress. Studies involving neuroendocrine structures [pituitary, adrenal, hypothalamus] where the focus is primarily on the synthesis, release, and regulation of hormones of the HPA, HPT, or HPG axes, such as studies of LH surge or control of ACTH secretion, should be reviewed in the EMNR IRG.

- **With the Renal and Urological Sciences [RUS] IRG:** Applications focusing on the central nervous system dealing with the neuroendocrine mechanisms underlying thirst could be assigned to NNB. Applications focusing on the central nervous system regulation of renal function could be assigned to RUS IRG.

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Biological Rhythms and Sleep Study Section [BRS]

(Formerly IFCN-3)

[BRS Roster]

The Biological Rhythms and Sleep [BRS] Study Section reviews applications in a number of areas of integrative, regulatory and behavioral neuroscience across the life span relating primarily to sleep, biological rhythms, and certain homeostatic processes. BRS primarily considers research with non-human animals [vertebrates and invertebrates], but relevant work with humans is also included. Areas of interest include behavioral states, such as wakefulness, sleep, hibernation and variations in arousal level; biological rhythms, including temporal cycles such as ultradian, circadian, infradian and circannual rhythms; and regulatory mechanisms underlying homeostasis, including thermoregulation and other functions of the autonomic nervous system. Applications on the relationship of drug administration, use, and withdrawal on homeostasis are reviewed here. Levels of analysis include genetic/molecular studies, cellular and circuit studies, neurobehavioral and neuropharmacological investigations, and behavioral studies of the whole organism. Emphasis is on integrative studies of mechanisms, functions, or neurobehavioral manifestations in whole organisms, but may include studies of other preparations [slices, explants, cell cultures, single cells, etc.].

Specific areas covered by BRS:

- Circadian rhythms, primarily studies of daily rhythms in activity or sleep-wakefulness; pacemaker mechanisms and properties; neuroanatomical pathways and mechanisms of entrainment and phase shifts; pacemaker output pathways, mechanisms and consequences; feedback effects; pharmacologic, physiologic, and endocrine interactions; pathophysiology and treatment of circadian disorders; circadian variation in drug efficacy and toxicity; and development and manifestation of circadian processes over the life span. Also included are applied studies of shift work, light-induced phase shifts, and other disturbances or manipulations of circadian rhythmicity; mechanisms and functions of pulsatile neurosecretion of hormones [e.g., melatonin] involved in circadian rhythms; identification of neural pulse generators

- Seasonal and circannual rhythms, including hibernation, reproductive rhythms, etc.

- Basic integrative mechanisms of sleep generation and maintenance. Neuroanatomical and organismal studies of the neural processes which generate sleep; development and manifestation of these processes over the life span; animal models; sleep deprivation; interaction of sleep and circadian rhythmicity; interaction of the endocrine and/or immune systems and sleep.

- Neural mechanisms underlying arousal level, attention, and wakefulness

- Oscillatory mechanisms; cellular and circuit analysis of oscillatory systems, such as thalamocortical rhythmicity

- Mechanisms underlying homeostasis, including thermoregulation and other functions of the autonomic nervous and immune systems

BRS has the following shared interests within the IFCN IRG:

- Studies of neuroendocrinological basis of circadian and circannual rhythms in behavior, as well as studies of neuroimmunological factors in sleep regulation, should be reviewed in BRS. Studies of homeostatic temperature regulation also should be reviewed in BRS, whereas studies of neural mechanisms of fever production, such as in infection, are reviewed in NNB.

- Rhythmicity in the sensitivity of somatosensory and chemical sensory systems may be assigned to SCS. When the focus is on general processes underlying rhythmicity then the application could be assigned to BRS.

- Studies of the effect of sleep and/or sleep deprivation on neurobiological events related to learning and memory are reviewed in LAM.

BRS has the following shared interests outside the IFCN IRG:

- **With the Cell Biology [CB[IRG:** Studies focused on the effects of light at the level of the retina could be reviewed within Biology and Diseases of the Posterior Eye [BDPE] study section in the CB IRG. Studies focused on the effects of light at the level of circadian rhythms could be reviewed within BRS.

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** Studies of neural mechanisms underlying arousal level, attention, and wakefulness may be assigned to BRS, whereas behavioral studies may be assigned to the BBBP IRG.

- **With the Endocrinology, Metabolism, Nutrition and Reproductive Sciences [EMNR] IRG:** The EMNR

IRG has shared interests with BRS in the broad area of biorhythms from pulsatile secretion to circadian and circannual rhythms. Applications focused on hormonal modulation of pulsatile secretion [e.g., LH surge] or role of pulsatile secretion in reproductive cyclicity would most likely be reviewed in the EMNR IRG. Applications focused on clock genes, SCN, or melatonin could be reviewed in BRS.

- **With the Respiratory Sciences [RES] IRG:** Basic neural mechanisms of sleep and circadian rhythms are most appropriate for the BRS, but studies concerning the neurobiological impact of sleep on breathing could be reviewed by the RES IRG. Studies of neural and humoral control of respiration are reviewed in the RES IRG.

- **With the Molecular, Cellular and Developmental Neuroscience [MDCN] IRG:** The MDCN IRG may be more appropriate for studies of signal transduction and related processes that occur within the context of a cell, with particular emphasis on cell electrophysiology, molecular biophysics, and neurochemical pathways. BRS may be more appropriate for studies in the context of integrated circuits, systems, and behavior.

- **With the Brain Disorders and Clinical Neuroscience [BDCN] IRG:** Studies dealing with basic homeostatic control of sleep and circadian or biological systems and other integrative functions of the autonomic nervous system should be reviewed in BRS. Studies dealing with clinical or patient-oriented studies of sleep disorders and treatment, where the focus is on the disorder and not neural processes, should be reviewed by the BDCN IRG.

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Somatosensory and Chemosensory Systems Study Section [SCS]

(Formerly IFCN-4)

[SCS Roster]

The Somatosensory and Chemosensory Systems [SCS] Study Section reviews research on the anatomy, physiology and psychophysics of chemosensory, pain, analgesia and somatosensory systems in animals and humans. In addition, drug mechanisms and effects are reviewed as they pertain to pain and analgesia. The emphasis is on integrative systems approaches to understanding normal sensory function; dysfunction; development, maturation and aging; recovery from injury; perceptual and sensory perturbations.

Specific areas covered by SCS:

- Chemosensation; olfaction, taste, vomeronasal and trigeminal chemosensory systems. Approaches include: neuroanatomy, physiology, neurobehavior, transduction, model systems, transmitters/receptors, perireceptor mechanisms, odorant binding proteins, plasticity [adaptive and maladaptive], peripheral afferents, sensory receptors, pharmacology, psychophysics, transduction, modulation, sensory discrimination, computational modeling, and correlates of nutrition.

- Pain and analgesia; anatomy, physiology of nociceptive pathways, imaging, pharmacology, critical molecules [e.g., receptors, neurotransmitters, transporters, channels, signaling molecules, growth factors], model systems, transduction, plasticity, genetics, development, psychophysiology, experimental therapeutics, sensitization, modulation, induction of gene expression, neurogenic inflammation, response to tissue and nerve injury, growth factors, cytokines, sympathetic nervous system, and neuropathies. Mediation and modulation of nociception; critical circuits [spinal and supraspinal] important in the mediation of pain responsiveness and analgesia; mechanisms of tolerance and sensitization to repeated noxious stimuli; and predisposing factors [genetic, developmental, and environmental] that may shape nociception and anti-nociception

- Touch and vibrotactile sensation; neurobiological aspects of somesthesis, including touch, temperature, and

vibrotactile sensation, neurophysiology, peripheral afferents, pharmacology, psychophysics, transduction, modulation, and sensory discrimination, receptors, transmissions, plasticity [adaptive and maladaptive] and development

SCS has the following shared interests within the IFCN IRG:

- NNB is concerned with afferent [e.g., nociceptive, visceral, mechanoreceptive] control of autonomic nervous systems, while SCS focuses on the sensory function of such inputs.

- Rhythmicity in the sensitivity of somatosensory and chemical sensory systems may be assigned to SCS. When the focus is on general processes underlying rhythmicity then the application could be assigned to BRS.

- SCS is concerned with the role of sensory inputs in sensation and perception, while SMI is concerned with their roles in motor control.

- Studies intended to elucidate the neurobiological mechanisms underlying cognition are appropriate for COG. Studies intended to elucidate mechanisms of somatosensory functions are more appropriate for SCS.

SCS has the following shared interests outside the IFCN IRG:

- **With the Risk, Prevention and Health Behavior [RPHB] IRG:** Studies focused on neural mechanisms of pain should be assigned to SCS. Applications that focus on individuals coping with pain would be assigned to the RPHB IRG.

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** Studies focused on neural mechanisms underlying chemosensation, pain and analgesia, and somatosensation are appropriate for SCS. Studies focused on behavioral consequences are more appropriate for the BBBP IRG.

- **With the Oncological Sciences [ONC] IRG:** Studies focused on neural mechanisms of pain could be assigned to SCS. If the focus is on oncology and pain is a part of the spectrum of issues being considered, the application could be assigned to the ONC IRG.

- **With the Musculoskeletal, Oral and Skin Sciences [MOSS] IRG:** Studies focused on neural mechanisms of musculoskeletal and oral pain should be assigned to SCS. When the primary focus is on musculoskeletal and oral diseases, disorders, treatment or rehabilitation, the application would be assigned to the MOSS IRG.

- **With the Renal and Urological Sciences [RUS] IRG:** There is a shared interest in neuronal mechanisms of pain in conditions such as interstitial cystitis and prostatitis. Applications focusing on the encoding or modulation of pain in the nervous system could be assigned to the SCS. Applications on the central nervous system regulation of urological function where pain is not the central focus could be assigned to the RUS IRG.

- **With the Surgical Sciences, Biomedical Imaging, and Bioengineering [SBIB] IRG:** Studies focused on neural mechanisms of pain and analgesia should be assigned to SCS. Studies of pain and analgesia in the context of surgery or anesthesiology should be assigned to SBIB IRG.

- **With the Molecular, Cellular and Developmental Neuroscience [MDCN] IRG:** The MDCN IRG may be more appropriate for studies of signal transduction and related processes that occur within the context of a cell, with particular emphasis on cell electrophysiology, molecular biophysics, and neurochemical pathways. SCS may be more appropriate for studies in the context of integrated circuits, systems, and behavior. The MDCN IRG reviews applications where a sensory system is being used as a model to study principles of nervous system development, as contrasted with a focus on the sensory system itself, in which SCS could be more appropriate.

- **With the Brain Disorders and Clinical Neuroscience [BDCN] IRG:** SCS has shared interests with the BDCN IRG in the areas of sensory system injury, sensory neuropathy, and disorders that affect sensory systems. In general, applications reviewed by the BDCN IRG focus on diseases and pathological processes; however, applications focused on consequences of sensory system injury or neuropathy specific to chemosensation should be reviewed in SCS.

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Sensorimotor Integration Study Section [SMI]

(Formerly IFCN-5)

[SMI Roster]

The Sensorimotor Integration [SMI] Study Section reviews applications concerned with the structure and function of motor, sensorimotor and vestibular systems. Emphasis is on integrative systems approaches to understanding neural substrates of sensorimotor integration, motor function and balance, as well as the effects of pathophysiological insults on the operation of these systems and recovery from such insults.

Specific areas covered by SMI:

- Motor systems; anatomy, physiology, transmitters/receptors, imaging, model systems, molecular biology, plasticity [adaptive and maladaptive], development [systems], locomotor pattern generators, proprioception, neurophysiology, motor control, pyramidal and extrapyramidal systems, basal ganglia, movement disorders, and computational models of motor systems; neural mechanisms underlying the formation of sounds.

- Sensorimotor integration; anatomy, physiology, transmitters/receptors, imaging, model systems, molecular biology, plasticity [adaptive and maladaptive], and development [systems]; integration of the sensory [e.g., vestibular, visual, auditory, somatosensory] and motor components of movement and balance control; their neural basis and function in behavioral control systems

- Vestibular systems: anatomy, physiology and biomechanics of the coordination of the motoric [as opposed to the perceptual and cognitive] aspects of balance and spatially directed motor performance; motoric aspects of the vestibulo-ocular, vestibulospinal, and postural control reflexes

SMI has the following shared interests within the IFCN IRG:

- With SCS, which is concerned with the role of sensory inputs in sensation and perception. SMI looks at their roles in motor control.

- Applications addressing vestibular components of neuro-otological disorders are reviewed in AUD. When the question is vestibular-motor integration in balance the applications should be assigned to SMI.

- COG has shared interests with SMI in the area of neural coding and integration mechanisms. Studies intended to elucidate the neurobiological mechanisms underlying cognition are appropriate for COG. Studies intended to elucidate the mechanisms underlying motor, sensorimotor or balance functions are more appropriate for SMI.

- CVP reviews applications whose principal focus is on the role of visual and vestibular input in the control of eye movements, whereas SMI is appropriate for applications that utilize the vestibular-ocular reflex as a means to study vestibular mechanisms.

SMI has the following shared interests outside the IFCN IRG:

- **With the Biology of Development and Aging [BDA] IRG:** Applications with a primary focus on aging studies of motor movement integration could be assigned to SMI. Aging aspects of motor movement integration could be assigned to the BDA IRG when the studies transcend single organ systems or disciplines.

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** In general, applications focusing primarily on development and control of motor behaviors, without in-depth concern with neurophysiological systems, are most appropriate for the BBBP IRG. Applications that rely on neurophysiological approaches to investigate neural substrates of motor behaviors and sensorimotor integration are best reviewed in SMI.

- **With the Musculoskeletal, Oral and Skin Sciences [MOSS] IRG:** Studies of neural control of normal biological motor function, particularly when the study is on neural structures, could be assigned to SMI. When the primary focus is on the role of skeletal muscle force production, assignment may be to the MOSS IRG. If the application addresses rehabilitation, electromyography, or neural prostheses for restoration of body movement, then the MOSS IRG may also be appropriate.

- **With the Respiratory Sciences [RES] IRG:** Studies of respiratory rhythm generation are most appropriately assigned to RES IRG, but could also be assigned to SMI when the major emphasis is on basic neural mechanisms of central pattern generators versus respiratory rhythm generation. There may be shared interests in the control of airway muscle.

- **With the Surgical Sciences, Biomedical Imaging, and Bioengineering [SBIB] IRG:** Grant applications that focus on the application of computational neuroscience to sensorimotor integration may be referred to SMI. When the focus is on the development and application of computational modeling and computational sciences to biomedical and clinical problems assignment may be to the SBIB IRG.

- **With the Molecular, Cellular and Developmental Neuroscience [MDCN] IRG:** (1) The MDCN IRG may be more appropriate for studies of signal transduction and related processes that occur within the context of a cell, with particular emphasis on cell electrophysiology, molecular biophysics, and neurochemical pathways. SMI may be more appropriate for studies in the context of integrated circuits, systems, and behavior. (2) The MDCN IRG reviews applications concerning regeneration of neural connectivity, however applications investigating regeneration of motor system components using neurophysiological approaches may be more appropriate for SMI.

- **With the Brain Disorders and Clinical Neuroscience [BDCN] IRG:** Applications reviewed in the BDCN IRG generally focus on diseases and pathological processes, with shared interests with SMI in the area of neural substrates and functional consequences of diseases involving motor systems. Applications may be assigned to SMI if the focus is on understanding processes of motor control rather than a disease.

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Auditory System Study Section [AUD]

(Formerly IFCN-6)

[AUD Roster]

The Auditory System [AUD] Study Section reviews applications on the structure and function of the auditory and vestibular systems. Emphasis is on integrative systems approaches to understanding hearing, vestibular end organ physiology, and developmental and maturational aspects of these two systems. Issues of aging, dysfunction and recovery from injury also are addressed.

Specific areas covered by AUD:

- Auditory system/hearing; neuroanatomy, neurophysiology, transmitters/receptors, imaging, model systems, pharmacology, transduction, plasticity [adaptive and maladaptive], development [systems], psychophysics, genetics, molecular biology and neurobehavior

- Vestibular system/end organ; neuroanatomy, neurophysiology, transmitters/receptors, model systems, pharmacology, transduction, plasticity [adaptive and maladaptive], and development [systems]

AUD has the following shared interests within the IFCN IRG:

- Applications addressing vestibular components of neuro-otological disorders are reviewed in AUD. When the question is vestibular-motor integration in balance the applications should be assigned to SMI.

- While AUD reviews applications that focus on the structure and function of the auditory system, while COG is more appropriate to review studies that use the auditory information as a basis to elucidate the neural mechanisms underlying language, perception, attention, executive processes, consciousness, hemispheric specialization, learning, memory and other cognitive functions.

AUD has the following shared interests outside the IFCN IRG:

- **With the Genes, Genomes and Genetics [GGG] IRG:** Applications with a primary focus on molecular genetic processes; large-scale gene/genomic/genetic studies; genetic variation or evolution; or, gene/genomic/genetic disease could be reviewed by the GGG IRG. However, applications with a primary focus on neuroscience processes could be reviewed by one of the neuroscience IRGs. The distinction is whether neuroscience questions are being asked or whether the nervous system is being used as a convenient model. Thus, proposals focusing on gene discovery and the genetic dissection of non-Mendelian human diseases and traits using complex or novel technologies may be more appropriate for GGG, while those using established genetic methods to study Mendelian diseases or complex diseases and traits where a specific gene related to auditory processes unambiguously has been identified may be more appropriate for AUD.

- **With the Bioengineering Sciences and Technologies [BST] IRG:** Grant applications focused on auditory mechanisms could be assigned to the AUD. Applications focused on auditory disease specific biological mechanisms and therapies, including gene therapies and drug delivery, could be assigned to AUD. Applications focused on the design, development, and introduction of technology for gene and drug delivery in nervous systems could be assigned to the BST IRG.

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** Applications focused on the neurobiology of the auditory system would be assigned to AUD. Studies of speech and language would be assigned to the BBBP IRG.

- **With the Infectious Diseases and Microbiology [IDM] IRG:** Bacterial diseases of the auditory system such as otitis media are a shared interest between AUD and the IDM IRG. Applications that focus on the infective agent could be assigned to IDM while those that focus on the consequences to auditory system function could be assigned to AUD.

- **With the Molecular, Cellular and Developmental Neuroscience [MDCN] IRG:** (1) The MDCN IRG may be more appropriate for studies of signal transduction and related processes that occur within the context of a cell, with particular emphasis on cell electrophysiology, molecular biophysics, and neurochemical pathways. AUD may be more appropriate for studies in the context of integrated circuits, systems, and behavior. (2) The MDCN IRG reviews applications on the initial formation, cell specification, and differentiation of the developing nervous system in which the particular system under study is not necessarily the fundamental

target of the research. Applications focused on the initial formation, cell specification and differentiation of the developing auditory or vestibular systems may be reviewed in AUD. (3) The MDCN IRG reviews applications on migratory events and the development, aging, and regeneration of neural connectivity, for which the particular system under study is not central to the fundamental goal of the research. Applications focused on migratory events, and the development, aging and regeneration of neural connectivity of the auditory or vestibular system may be more appropriately reviewed in AUD.

- **With the Brain Disorders and Clinical Neuroscience [BDCN] IRG:** The BDCN IRG reviews applications on fundamental sensory system injury or neuropathy where the particular system under study is not central to the fundamental goal of the research. Applications focused on the consequences of auditory system injury or neuropathy should be reviewed in AUD.

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Neurobiology of Learning and Memory Study Section [LAM]

(Formerly IFCN-7)

[LAM Roster]

The Neurobiology of Learning and Memory [LAM] Study Section reviews applications on the neurobiological structures, mechanisms, and principles underlying specific aspects of learning, memory, and associated neural plasticity. The scope of this committee is broad, including studies of the molecular and cellular changes, functional circuitry, and neural coding and integration that underlie learning and memory processes, as well as their disorders. Particular emphasis is placed on studies that directly relate behavioral/cognitive processes to their neural substrates.

Specific areas covered by LAM:

- Cellular plasticity; studies aimed at understanding cellular events that underlie the integration of information and interactions among neurons subserving learning and memory
- Neurochemistry, neuropharmacology, and molecular genetics; studies of molecular and genetic mechanisms that underlie specific aspects of learning and memory function, including selective neurochemical lesions, molecular-genetic manipulations, molecular correlates, pharmacological manipulations, and drug effects
- Functional circuitry; anatomical pathways and behavioral physiology of brain structures that mediate learning and memory, including purely anatomical studies and analyses of the effects of brain injury or reversible inactivation of specific brain structures; specification and dissociation of properties of different learning and memory systems, including those that mediate declarative/explicit memory, working memory, motor/habit learning, emotional learning, and other forms of implicit memory
- Neural correlates of learning and memory; characterization of neural activity using such techniques as event-related potentials, electro- and magneto-encephalographic activity, single neuron and population firing patterns, and brain imaging associated with learning and memory
- Studies of learning and memory deficits resulting from trauma, transient ischemia, Alzheimer's disease, and other disorders that shed light on normal and abnormal learning and memory functions
- Studies of the development of memory capacity and age-related memory loss that shed light on neurobiological mechanisms of learning and memory
- Computational and theoretical modeling; studies that focus on how synaptic plasticity, neural circuitry, and interactions among brain structures and systems affect learning and memory performance

LAM has the following shared interests within the IFCN IRG:

- While memory is common to many cognitive neuroscience applications, assignment will be based on the primary intent of the research and not simply on the presence or absence of memory in the research paradigm. LAM is more appropriate to review applications in which learning or memory is the primary focus of the study. COG is more appropriate to review applications in which learning or memory is a part of a more general cognitive function.

LAM has the following shared interests outside the IFCN IRG:

- **With the Biology and Development and Aging [BDA] IRG:** Applications with a primary focus on aging studies of memory in the context of cognitive neuroscience could be assigned to LAM. Aging aspects of memory could be assigned to the BDA IRG when the studies transcend single organ systems or disciplines.

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** Behavioral studies that directly involve manipulation, measurement, or modeling of neural mechanisms underlying learning and memory are appropriate for LAM. Studies focused primarily on behavioral aspects of learning and memory should be reviewed by the BBBP IRG.

- **With the Surgical Sciences, Biomedical Imaging and Bioengineering [SBIB] IRG:** Both LAM and the SBIB IRG review applications dealing with functional brain imaging; however, LAM is more appropriate to review applications that use imaging as a tool to study the neurobiological processes of learning and memory. The SBIB IRG is more appropriate to review applications concerning development and evaluation of imaging procedures. Studies that focus on the application of computational neuroscience to learning and memory may be referred to LAM. When the focus is on the development and application of computational modeling and computational sciences to biomedical and clinical problems assignment may be to the SBIB IRG.

- **With the Molecular, Cellular and Developmental Neuroscience [MDCN] IRG:** (1) The MDCN IRG and LAM have common interests in cellular forms of plasticity such as LTP and LTD. Studies delineating intracellular and molecular mechanisms may be more appropriate for the MDCN IRG. Studies addressing rules and mechanisms of plasticity that impact on specific aspects of higher levels of analysis may be more appropriate for LAM. (2) Studies of functional synaptic plasticity [such as synaptic efficacy and receptive field organization] associated with cognitive processes, such as learning and memory, may be more appropriate for LAM. Studies of plasticity associated with fundamental mechanisms involved in the establishment, maintenance, and reorganization of synaptic connections may be more appropriate for MDCN.

- **With the Brain Disorders and Clinical Neuroscience [BDCN] IRG:** The BDCN IRG and LAM have common interests in disorders of learning and memory. LAM considers applications that focus on disorders of learning and memory as they elucidate specific normal memory processes. The BDCN IRG reviews applications that focus on the basis or consequences of brain disorders.

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Cognitive Neuroscience Study Section [COG]

(Formerly IFCN-8)

[COG Roster]

The Cognitive Neuroscience [COG] Study Section reviews a broad range of applications on the neurobiological mechanisms and principles underlying cognitive functions other than learning and memory. The scope of the committee is broad, including molecular and cellular mechanisms, functional circuitry, and neural coding and

integration that underlie behavioral/cognitive processes as well as their disorders. Particular emphasis is placed on studies that directly relate behavioral/cognitive processes to their neural substrates.

Specific areas covered by COG:

- Perception and sensory motor integration. Specific examples include pattern and object recognition in all sensory domains, cross-model integration of sensory information, spatial cognition, spatial transformations within the brain, decision- making and motor planning, as they relate to cognition.

- Attention, including spatial- and feature-based mechanisms in all sensory domains. Influences of attention on information flow within the brain in human and animal studies, as related to cognition.

- Language and speech perception, as reflected in cortical function and represented in neural activity, for example fMR, may be reviewed in COG.

- Theoretical/computational modeling of neural mechanisms underlying specific cognitive functions; dynamics and spatiotemporal organization of neural populations; new techniques, analytic methods, ways to visualize complex data sets that show promise of elucidating neural processes underlying cognitive functions.

- Changes in cognition during development, maturation and aging, as reflected in neural substrates, may be reviewed by COG.

- Brain disorders, pharmacological and environmental factors as they elucidate the neurobiological bases of cognitive processes.

- Other cognitive functions such as executive processes, conscious versus non- conscious processing, imagery, hemispheric specialization, and emotional and motivational processes that influence cognitive function

COG has the following shared interests within the IFCN IRG:

- While studies of emotional and motivational processes that influence cognition are appropriate for COG, studies to elucidate the structural and functional bases of motivational and emotional behavior are more appropriate for NMB.

- SCS reviews applications on neural processing involved in chemosensation, pain and vibrotactile sensation. Studies with the intent to elucidate the neurobiological mechanisms underlying sensory perception are appropriate for COG.

- SMI and COG have shared interests in the area of motor systems. COG deals with higher motor processes and planning, while SMI reviews applications dealing with pyramidal and extra -pyramidal motor systems and sensory motor systems.

- COG and AUD review applications dealing with cortical processing of auditory information. COG is appropriate to review studies that use auditory information as a basis to elucidate the neural mechanisms underlying language, attention, perception, attention, executive processes, consciousness, hemispheric specialization and other cognitive functions. AUD is more appropriate to review most applications that focus on the structure and function of the auditory and vestibular systems.

- COG has shared interests with LAM. While memory is common to many cognitive neuroscience applications, assignment will be based on the primary intent of the research and not simply on the presence or absence of learning or memory in the research paradigm.

- There are shared interests between CVP and COG. COG is more appropriate to review studies concerning vision as a part of underlying neurobiological processes for attention, perception, hemispherical specialization,

and other cognitive functions as reflected in their neural substrates. CVP is more appropriate to review applications focusing on normal and abnormal visual and oculomotor processes.

COG has the following shared interests outside the IFCN IRG:

- **With the Biology of Development and Aging [BDA] IRG:** Changes in cognition during aging, as reflected in neural substrates, may be reviewed by COG. Aging aspects of cognition could be assigned to the BDA IRG when the studies transcend single organ systems or disciplines.

- **With the Biobehavior al and Behavioral Processes [BBBP] IRG:** (1) The BBBP IRG generally reviews applications on voice, speech, and language. Such studies conducted within the broader context of other cognitive processes, such as attention and perception, and with emphasis on neural substrates may be reviewed in COG. (2) The BBBP IRG reviews applications on the development of perception, attention and language formation, but COG is more appropriate to review applications that focus on the neurobiological mechanisms underlying such cognitive functions. Studies that focus on behavior should be reviewed by the BBBP IRG.

- **With the Surgical Sciences, Biomedical Imaging and Bioengineering [SBIB] IRG:** (1) SBIB reviews applications that are specifically concerned with development of imaging technology. However, COG is more appropriate for research that is more oriented toward the application of imaging techniques to elucidate neural biological processes underlying cognition. (2) Studies that focus on the application of computational neuroscience to cognitive neuroscience may be referred to COG. When the focus is on the development and application of computational modeling and computational sciences to biomedical and clinical problems assignment may be to the SBIB IRG.

- **With the Brain Disorders and Clinical Neuroscience [BDCN] IRG:** Studies of clinical populations and interventions are appropriately reviewed by the BDCN IRG. COG is appropriate for research focused on revealing neural mechanisms of cognition. Studies characterizing cognitive deficits, their time course, or treatment should be reviewed by the BDCN IRG.

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Neurotoxicology and Alcohol Study Section [NAL]

(Formerly ALTX-3)

[NAL Roster]

The Neurotoxicology and Alcohol [NAL] Study Section addresses the effects of toxicants and alcohol on the central nervous system. Parameters that may be studied include behavior, behavioral genetics, neuropathology, neurophysiology, neuropharmacology, neuroendocrinology, neuroimmunology, neuromuscular toxicology, and neuroteratology.

Specific areas covered by NAL:

- Neuropharmacology/toxicology; behavior affected by or related to toxicants and alcohol, e.g. craving, cue reactivity, initiation and reinforcement of drinking, drug discrimination, place preference, tolerance, dependence, alterations in behavior, effects on learning and memory; cellular and subcellular effects of toxicants and alcohol, including structure-function of channels/receptors, signal transduction, cytoskeletal elements

- Both cellular and whole animal neuropathological effects of toxicants and alcohol. This includes morphological consequences of acute and chronic exposure as well as in vitro model systems such as effects on cultured

neurons

- Neurophysiological studies of the actions of toxicants and alcohol on various components of the CNS expressed at a systems level in humans, animal models, tissue culture, and single cell model systems.

- The role of toxicants and alcohol on neuroendocrine systems such as the HPA and HPG axes, and CNS specific actions.

- Neuroteratology; brain and behavioral effects of prenatal exposure

- Studies relating to the interaction of the brain and immune systems, e.g., the role of cytokines in the effects of toxicants and alcohol.

NAL has the following shared interests within the IFCN IRG:

- NMB deals with the neural substrates of various behaviors, including the influence of drugs, while NAL should be considered if the focus of the application is on alcohol or environmental toxicants.

- NNB deals with neuroendocrinology and neuroimmunology and should be considered if the focus is not on alcohol or environmental toxicants.

NAL has the following shared interests outside the IFCN IRG:

- **With the Biology of Development and Aging [BDA] IRG:** Studies in which the primary focus is on multisystem teratology may be more appropriate for the BDA IRG, while such studies with toxicants or alcohol in the context of the development of the nervous system are more appropriate for NAL.

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** Studies in which the primary focus is behavioral may be more appropriate for the BBBP IRG, while such studies with toxicants or alcohol in the context of neurobiology are more appropriate for NAL.

- **With the Immunology [IMM] IRG:** Studies in which the primary focus is immunological may be more appropriate for the IMM IRG, while such studies with toxicants or alcohol in the context of neurobiology are more appropriate for NAL.

- **With the Endocrinology, Metabolism, Nutrition and Reproductive Sciences [EMNR] IRG:** There is shared interest in the areas of the endocrinological aspects of pregnancy, pregnancy-related studies of pharmacology and toxicology, and fetal or neonatal growth and development. Applications focused on neurotoxicology during pregnancy and neonatal growth could be assigned to NAL. Applications focused on pregnancy and neonatal growth themselves could be assigned to the EMNR IRG.

- **With the Musculoskeletal, Oral and Skin Sciences [MOSS] IRG:** Studies in which the primary focus is on muscle may be more appropriate for the MOSS IRG, while studies with toxicants or alcohol in the context of the neurobiology of muscular control are more appropriate for NAL.

- **With the Digestive Sciences [DIG] IRG:** Shared interests exist in areas where the pharmacological and/or toxicological effects of xenobiotics, including alcohol, on the nervous system are studied. Where studies relate primarily to the disposition of such xenobiotics, or toxicity to the digestive system, they could be assigned to the DIG IRG. Where studies of xenobiotics relate primarily to effects on the nervous system, they could be assigned to the NAL.

- **With the Brain Disorders and Clinical Neuroscience [BDCN] IRG:** (1) BDCN and NAL have shared interests with respect to the interaction of alcohol and the developing nervous system. BDCN should be considered if the primary focus is on the neural substrate and the vulnerability of the developing brain. NAL

is more appropriate for general studies of alcohol or toxicant teratogenesis and pathophysiology. (2) Applications focused primarily on alcohol or toxicant pathophysiology should be reviewed in NAL, but projects in which alcoholism is a comorbid factor can be reviewed in the BDCN IRG.

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Central Visual Processing Study Section [CVP]

(Formerly VISB)

[CVP Roster]

The Central Visual Processing [CVP] Study Section reviews basic, applied, and clinical research on the development, aging, structure, function, and disorders of those portions of the brain, eye, and extraocular muscle system that serve visual sensation of brightness, color, space/form, motion, depth, as well as accommodation, pupil contraction, and eye movements.

Specific areas covered by CVP:

- Visual processing and eye movements; genetic, molecular, cellular, systems level, and behavioral analyses, including anatomy, electrophysiology, physiological optics, psychophysics, and mathematical/computational modeling, in both vertebrates and invertebrates, to better understand eye movements and visual processing. This includes studies of visual constancies, binocular space sense, visual illusions, behavioral studies of orienting and positioning reflexes of lower animals, pupillary contraction, accommodation, visual neurosensory disorders, color vision, stereopsis, motion, and pattern recognition.

- The structure and function of the higher visual pathways; histological, electrophysiological, and biochemical techniques and the data processing of neural signals from the retina to the higher visual pathways, especially temporal and spatial interactions, leading to a better understanding of color vision, stereopsis, motion, and pattern recognition. This includes genetic and molecular biological studies, as well as studies of the development of the visual cortex and associated pathways in vertebrate and invertebrate visual systems, including clinical studies.

- Studies directed toward gaining a better understanding of normal vision, as well as identifying the causes, of visual and visual-motor deficits, low vision, and blindness, such as myopia, amblyopia, strabismus, and neuro-ophthalmic disorders

- Research aimed at enhancing the remaining vision of visually disadvantaged individuals, evaluating new and existing optical aids, studying video magnification and image enhancement systems, and other instruments, techniques, and human factor strategies aimed at improving visual performance and mobility; tests of visual or ocular function

CVP has the following shared interests within the IFCN IRG:

- While CVP reviews applications whose principal focus is on the role of visual and vestibular input in the control of eye movements, SMI reviews applications that focus on the vestibular-ocular reflex as a means to study vestibular mechanisms.

- Studies focused on the neural bases of visual sensations and early stages of visual perception should be assigned to CVP, but studies concerned with the neural basis of later states of visual perception and cognition should be assigned to COG.

CVP has the following shared interests outside the IFCN IRG:

- **With the Cell Biology [CB] IRG:** Studies focused on the effects of light at the level of the retina should be reviewed within Biology and Diseases of the Posterior Eye [BDPE] study section in the CB IRG. CVP is concerned with neurophysiological and psychophysical studies of those portions of the brain and eye that serve visual sensation and visual-motor processes.

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** The BBBP IRG generally reviews applications on cognition and perception related to the visual system. CVP is more appropriate to review applications that focus on the neurobiological mechanisms underlying such visual functions.

- **With the Risk Prevention and Health Behavior [RPHB] IRG:** Studies focused on neural mechanisms of visual perception should be assigned to CVP. Applications that focus on quality of life issues for the blind or individuals with low vision would be assigned to the RPHB IRG.

- **With the Musculoskeletal, Oral and Skin Sciences [MOSS] IRG:** Studies of the structure and physiology of skeletal muscle, including the extraocular eye muscle, could be assigned to the MOSS IRG. Applications dealing with eye movement are more appropriate for CVP.

- **With the Brain Disorders and Clinical Neuroscience [BDCN] IRG:** The Anterior Eyes Disease [AED] study section in the BDCN IRG is concerned with the anterior portion of the eye and its disorders [including glaucoma], while CVP reviews applications emphasizing normal and abnormal visual and visual-motor processes, including studies of extraocular [muscular and orbital] disorders, and involving techniques used primarily by visual physiologists or visual psychophysicists.

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IFCN Small Business Activities [SBIR/STTR] Special Emphasis Panels [IFCN Small Business SEPs]

[SBIR/STTR Rosters]

Within the context of integrative neuroscience, several of the study sections in the IFCN IRG deal with the neurobiology of sensory processes. Small business applications dealing with sensory processes other than vision on the level of basic neuroscience are reviewed in one of two special emphasis panels within the IFCN IRG, as follows:

Ear [IFCN 10], reviews applications dealing with the auditory system and hearing:

Specific areas covered include:

- Enhancing the hearing of hearing impaired individuals
- Diagnostic audiometry
- Devices or processes related to the neurobiology of the auditory system

Neural Systems [IFCN 11], reviews applications reflective of sensory processes [other than hearing and vision] as well as those dealing with basic neuroscience research on an integrative rather than molecular or clinical level.

Specific areas covered include:

- Development of medications for pain:
- Devices or processes related to sensory systems other than vision and audition.

- Tools for use in basic neuroscience research

IFCN Small Business Activities have the following shared interests outside the IRG:

- **With the Genes, Genomes and Genetics [GGG] IRG:** Assignment of a molecular genetics/genomics/genetics application to IFCN should be based on the nature of scientific question(s) being addressed. Studies that are directed at the auditory system disease could be assigned to the IFCN IRG, even when genetics, genomic or molecular technologies are being developed. Assignment could be to GGG if the focus of applications is on emerging genetic or genomic technologies(s) or if multiple diseases or organ systems are being studied.

- **With the Risk, Prevention and Health Behavior [RPHB] IRG:** While IFCN reviews small business applications on the neuroscience of sensory systems other than vision, as well as tools for use in basic neuroscience research, applications dealing with quality of life issues due to sensory impairment would be reviewed by RPHB.

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** Devices or procedures for studying animal behavior would be assigned to the BBBP IRG. Devices or procedures for use in integrative neuroscience would be assigned to the IFCN IRG.

- **With the Molecular, Cellular and Developmental Neuroscience [MDCN] IRG:** Molecular and cellular level neurotechnology would be reviewed by MDCN.

- **With the Musculoskeletal, Oral, and Skin Sciences [MOSS] IRG:** There is shared interest with the IFCN IRG with respect to motor systems and sensorimotor integration. If the application addresses neural control of normal biological motor function then the IFCN IRG may be appropriate. If the application addresses rehabilitation, electromyography, neural prostheses or restoration of body movement, then the MOSS IRG may be appropriate.

- **With the Brain Disorders and Clinical Neuroscience [BDCN] IRG:** Small business applications dealing with the visual system would be reviewed in BDCN. Neuroscience applications dealing with clinical devices and procedures would be reviewed by BDCN.

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